

REMARKS

In an Office Action mailed November 29, 2006, the Examiner in charge of the above-noted application rejected the claims under a variety of grounds. Claims 13-24 are rejected under 35 USC §112, second paragraph; Claims 13-24 are rejected under 35 USC 102(b) and 103(a) as being unpatentable. Applicants respond below to the issues presented in the Office Action. In view of the amendments noted above and the arguments presented herein, applicants respectfully request reconsideration of the merits of this application.

Claim Amendments

Claims 1 and 13 are amended to specify the type of stem cells. Accordingly, dependent Claims 2 and 14 are canceled. Also, Claims 1 and 13 are amended to clarify the term "reduced" as it relates to the level of differentiation. Claim 1 is also amended to clarify that the periodic strain is applied to the matrix and the cells thereon. Thus, the strain applied on the matrix is mechanically linked to the strain on the cells.

Claim 13 is further amended to affirmatively recite more structure into the product -by-process claim. New Claim 25 is added to essentially mirror Claim 1, wherein the variation is that the periodic strain is applied directly to the cells and not indirectly through the matrix. Support for these amendments is found for example, at pg. 3 [00016] and Figure 2A; pg. 4, [00024-00026]; pg. 5, [00025]; pg. 7, [00036]; and pg. 8, [00039]. No new matter is added.

It is noted that although the finality of the requirement for restriction is acknowledged, under Ochiai/Brouwer applicants respectfully request rejoinder of non-elected Claims 1 and 3-12 in the application, as they are amended to include the limitations of the product-by-process claims. (See, In re Ochiai, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995) and In re Brouwer, 77 F.3d 422, 37 USPQ2d 1663 (Fed. Cir. 1996)). Based on these amendments, reconsideration of the rejections is kindly requested.

Claim Rejections - 35 USC §112

Claims 13-24 are rejected under 35 USC §112, second paragraph, as being indefinite. Specifically, the Examiner asserts the term "reduced" as it relates to differentiation requires clarification. Accordingly, Claim 13 is amended to clarify any perceived indefiniteness.

Claim Rejections - 35 USC §102/103

Claims 13-24 are rejected under 35 USC 102(b) as being anticipated by and under 35 USC 103(a) as being unpatentable over Thomson (US 5,843,790 and US 6,200,806). Applicants disagree.

The '780 patent discloses a purified preparation of primate embryonic stem cells characterized by undifferentiated cell surface markers; normal karyotypes; and the ability to proliferate in an undifferentiated state after continuous culture for eleven months. The disclosed embryonic stem cell lines also retain the ability, throughout the culture, to form trophoblast and to differentiate into all tissues derived from all three embryonic germ layers (endoderm, mesoderm and ectoderm).

However, contrary to the Examiner's assertion, the '780 patent does not disclose each and every element set forth in amended Claim 13 as required by MPEP §2131. For example, it does not disclose a flexible solid porous matrix or a means for stretching the matrix. Furthermore, the '780 patent does not enable the claimed embodiments. Nowhere in the '780 patent is there a teaching, suggestion, or motivation to culture the cells on a flexible solid porous matrix and provide means for applying an effective amount of periodic strain to stretch the flexible matrix or the cells thereon to reduce cell differentiation.

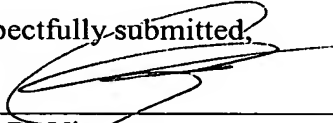
As to the '806 patent, applicants submit its disclosure relates to the '780 patent, as the former is simply a divisional of the later. Like the '780 patent, the '806 patent discloses primate embryonic stem cells expressing undifferentiated cell surface markers and capable of differentiating into all tissues derived from all three embryonic germ layers (endoderm, mesoderm and ectoderm). However, the claims of the '806 patent are drawn to a purified preparation of pluripotent *human* embryonic stem cells. Also, like the '780 patent, the '806 patent does not disclose a flexible solid porous matrix or means for applying an effective amount of periodic strain to stretch the flexible matrix or the cells thereon. Thus, neither of the cited Thomson patents anticipate or render the claimed embodiments obvious.

Accordingly, applicants respectfully request that in view of these claim amendments and comments, the rejection be respectfully reconsidered, withdrawn and that a timely Notice of Allowance be issued in this case.

Application No.: 10/717,677
Response dated: February 28, 2007
Reply to Office Action dated: November 29, 2006

No fees are believed to be due with the submission of this response. Should any extension of time be due in this or any subsequent response, please consider this to be a Petition for the appropriate extension of time and a request to charge the petition fee to Deposit Account No. 17-0055.

Respectfully submitted,



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